CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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25X1

COUNTRY	Bulgaria	REPORT	
SUBJECT	Hydraulics Construction	DATE DISTR.	19 April 1954
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This is UNEVALUATED Information

THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

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[redacted]

The Rila Planina - Sofia Aqueduct - July 1951

1. A sketch of the Rila Planina-Sofia aqueduct is enclosed herewith as an Appendix, pages 8, 9, and 10. [redacted] 25X1
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2. Construction on this aqueduct started in 1926 and was originally carried out by a German contracting company, the "Lenz Belfinger." In 1928, following the failure of this company, the job was taken over by the "Roma Construction Company" which completed the construction in 1931. This aqueduct is 76 kilometers long and it supplies water to two hydroelectric power stations [redacted] 25X1 25X1

3. Water for this aqueduct is drawn from seven lakes of the Rila Planina (see No. 1 of Appendix) and is carried to an artificial lake caused by a dam (see No. 2 of Appendix), by means of connecting conduits which consist of concrete pipes on the surface of the ground with a diameter varying between 2-3-4 meters, and canals on the surface and banked on both sides. The seven lakes mentioned above are located at a height of approximately 1,900 meters above sea level.

4. The artificial lake (see No. 2 of Appendix) has the following characteristics:

   a. Capacity: 17,000,000 cubic meters;

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STATE	ARMY	NAVY	AIR	FBI	AEC	ORR E	
x	x	x	x			x	

(Note: Washington Distribution Indicated By "X"; Field Distribution By "#".)

[redacted] 25X1

b. Width at center: 1,700 - 1,800 meters;

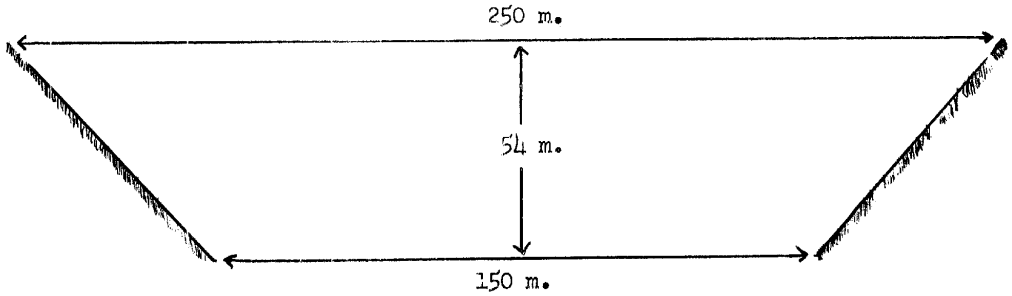
c. Length: Approximately 4,000 meters; and

d. Maximum height of the water at the dam: 50 meters.

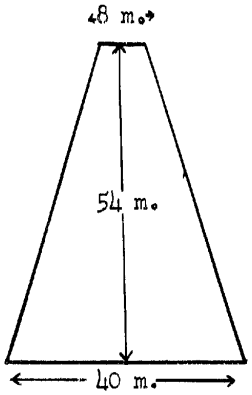
The lake is cut into the bed of the Tsarska Bistritsa Reka.

5. The dam is in reinforced concrete and exactly perpendicular to the direction of the stream. The scarp and the slope of the dam are faced in freestone. See sketch below:

Front View:



Side View:



6. [redacted] 25X1

7. From the dam mentioned above the water proceeds for a distance of approximately 1,400 meters in the natural bed of the Tsarska Bistritsa Reka, to the I Collecting Tank. This tank is in reinforced concrete and is covered with a reinforced concrete slab supported by pillars with a diameter of 60 centimeters. This tank is partially buried and is only 1-1.5 meters above the level of the ground.

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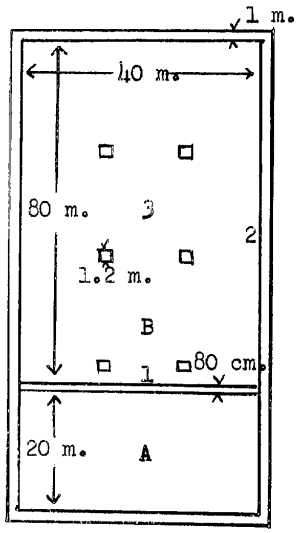
8. The sketch below is a schematic drawing of the tank:

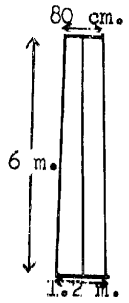


Legend for the sketch above:

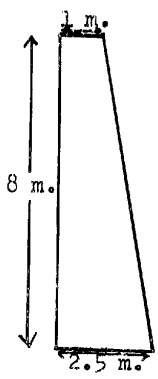
A. Compartment I

B. Compartment II:

1. Wall dividing the two compartments with weir on the edge; sketch below shows a side view of this wall:



2. Reinforced concrete side walls of the tank; sketch below shows a side view of these walls:



3. Support pillars of the concrete slab; eight meters high and 1.2 meters long on each side.

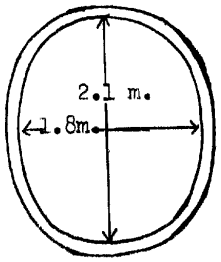
9. From compartment II of collecting tank I, two Mannesmann conduits, approximately 1,500 meters in length, run through an intake building equipped with metal water gates and reach a hydroelectric station. The forced conduits (see No. 5 of Appendix) have a constant gradient of 0.45 x 1 meter, except for the last stretch of approximately 200 meters where the gradient is approximately 0.6-0.8 x 1 meter. These conduits are completely underground and covered with 50 centimeters of earth. The routes of these conduits are easy to follow since they run through a pine woods and the sections covered by the conduits are barren of trees. The Mannesmann conduits have the following characteristics:

a. Internal diameter: 90 centimeters; and

b. Width: 16 millimeters.

Along the 1,500-meter stretch it had been planned to install conduits, with an interior diameter of 1.1 meters, coming from Great Britain. Since these failed to arrive, available conduits with an interior diameter of 90 centimeters were used.

10. From the hydroelectric station the water is carried in a reinforced concrete ordinary conduit (see No. 7 of Appendix) with polycentric arches which runs for a distance of approximately 51 kilometers and joins the II collecting tank. This conduit is underground and covered with a layer of earth approximately one meter thick. The sketch below shows this type of conduit:



This conduit has the following characteristics:

a. Width at top: 15 cm.;

b. Width of sides: 20 cm.; and

c. Width at bottom: 30 cm.

11. The II collecting tank (see No. 8 of Appendix) is in reinforced concrete and is covered with a reinforced concrete slab which is supported by pillars and is approximately one meter thick. The II collecting tank is underground and is covered with a layer of earth 1-2 meters thick.

12. The sketch at the top of page 5 is a schematic drawing of the II collecting tank:

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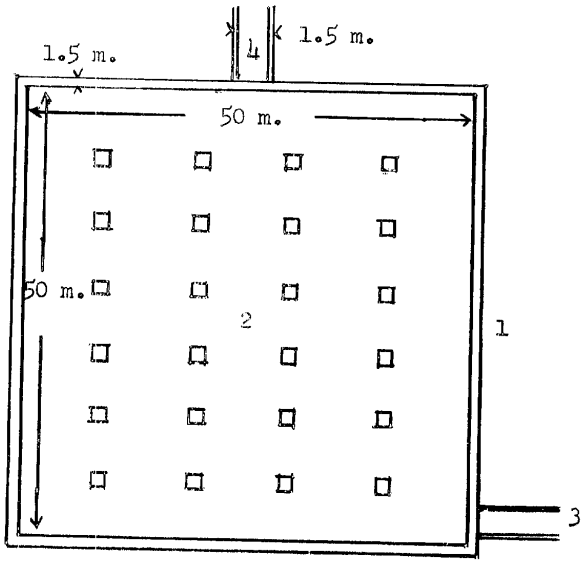
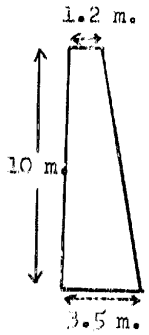


Legend for the sketch above:

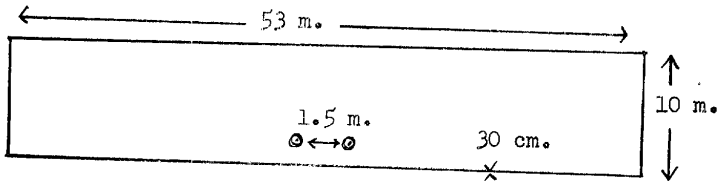
1. Reinforced concrete side walls of the tank; sketch below shows a side view of these walls:



2. Support pillars of the concrete slab; 10 meters high and 1.2 meters long on each side.

3. Conduit leading to water intake, running on the surface of the ground; joins the collecting tank at a height four meters above the base of the tank.

4. Water outlet conduit equipped with metal water gates; a detailed diagram of the water outlet conduit is shown below:



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13. From collecting tank II, two Mannesmann conduits, approximately five kilometers in length, run to the II hydroelectric station. These conduits have an initial gradient of o.25 x 1 meter and have the following characteristics:

a. Internal diameter: 1.10 meters; and

b. Width: 18 millimeters.

These conduits (see No. 9 of Appendix) run underground at a depth of one meter and parallel a telephone line which is placed between poles and is used exclusively by the aqueduct.

14. The water leaving the hydroelectric station enters a reinforced concrete conduit which is on the surface of the ground and has the same characteristics as the conduit mentioned above. After running a distance of three kilometers, this conduit reaches the compensation tanks and the filter installations of Sofia, located in the immediate vicinity of the former seminary shown as No. 122 in the Appendix to CS-4000c. Informant could give no details concerning these installations or concerning irrigation canals.

15. The aqueduct is equipped with a private telephone line which runs from the Rila Planina Lakes to the compensation tanks and the filter installation of Sofia. This telephone line runs along the entire length of the aqueduct.

The Boyana (N 42-39, E 23-16) - Sofia Aqueduct - July 1951

16. Water for this aqueduct is drawn from the Vitosha Planina and, by means of connecting conduits, is carried to a collecting tank [redacted] 25X1
[redacted] From here, reinforced concrete conduits, completely underground, run a distance of approximately 1,500 meters, reach and feed a hydroelectric station. [redacted] 25X1
their gradient in the 1,500-meter section is 0.35 x 1 meter.
[redacted]

The Boykovo (N 41-59, E 24-37) - Plovdiv Aqueduct - Winter 1949

17. This aqueduct was built between 1923 and 1926 and is 28 kilometers in length. The water is drawn from the hydroelectric station of Boykovo and, by means of underground conduits, [redacted] is carried to a collecting tank located 400 meters southwest of the railway station of Plovdiv. 25X1
[redacted]

Source of Devna Reka - Varna Aqueduct - May 1951

18. This aqueduct was constructed prior to 1920. It draws its waters from the sources of the Devna Reka. [redacted] 25X1

Irrigation Canals - Spring 1951

19. The primary canal connects with a submerged dam which is in the Maritsa River and is located approximately 10 kilometers west of Plovdiv. This canal feeds a network of irrigation canals which branch out in the vast rice fields in this area. These rice fields cover an area 30 x 20 kilometers in size, running in an east-west direction, the center of which area is located at a point nine kilometers north of Plovdiv.

[redacted] 25X1

20. A network of canals which irrigate a vast area in the vicinity of Borisovgrad, which area is cultivated to rice, draws its water from a submerged dam located in the Maritsa River, approximately six kilometers west of Borisovgrad. The rice fields occupy an area 20 x 15 kilometers in size the center of which is located three kilometers north of Borisovgrad.

21. Additional irrigation canals of lesser importance, which draw their water from dams or from outlet canals of hydroelectric stations, are covered in the Motor Power Section [redacted] 25X1

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APPENDIX

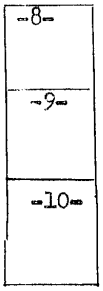
The Rila Planina - Sofia Aqueduct

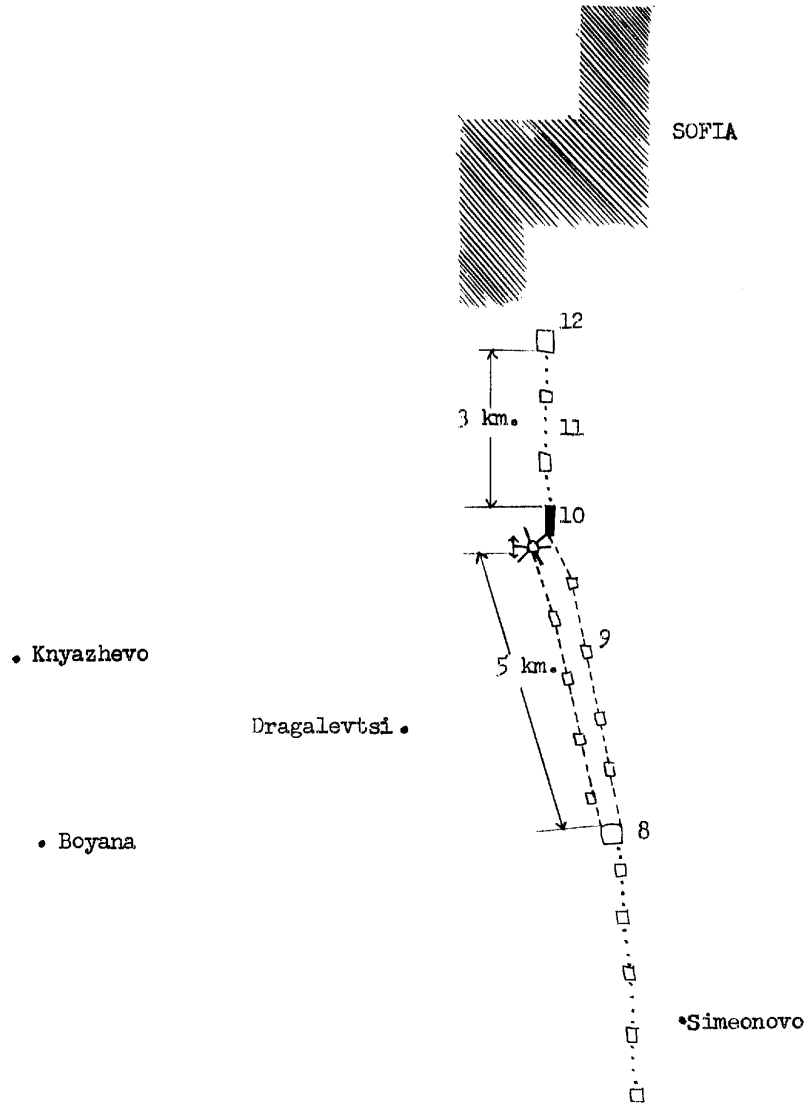
76 kilometers

L E G E N D

1. Connecting conduits.
2. Artificial lake with dam.
3. Bed of Tsarska Bistritsa River.
4. I collecting tank.
5. Underground forced conduit.
6. I hydroelectric central.
7. Ordinary underground conduit.
8. II collecting tank.
9. Underground forced conduit.
10. II hydroelectric central.
11. Ordinary underground conduit.
12. Compensation tank and filter installation.

Assemble as follows:





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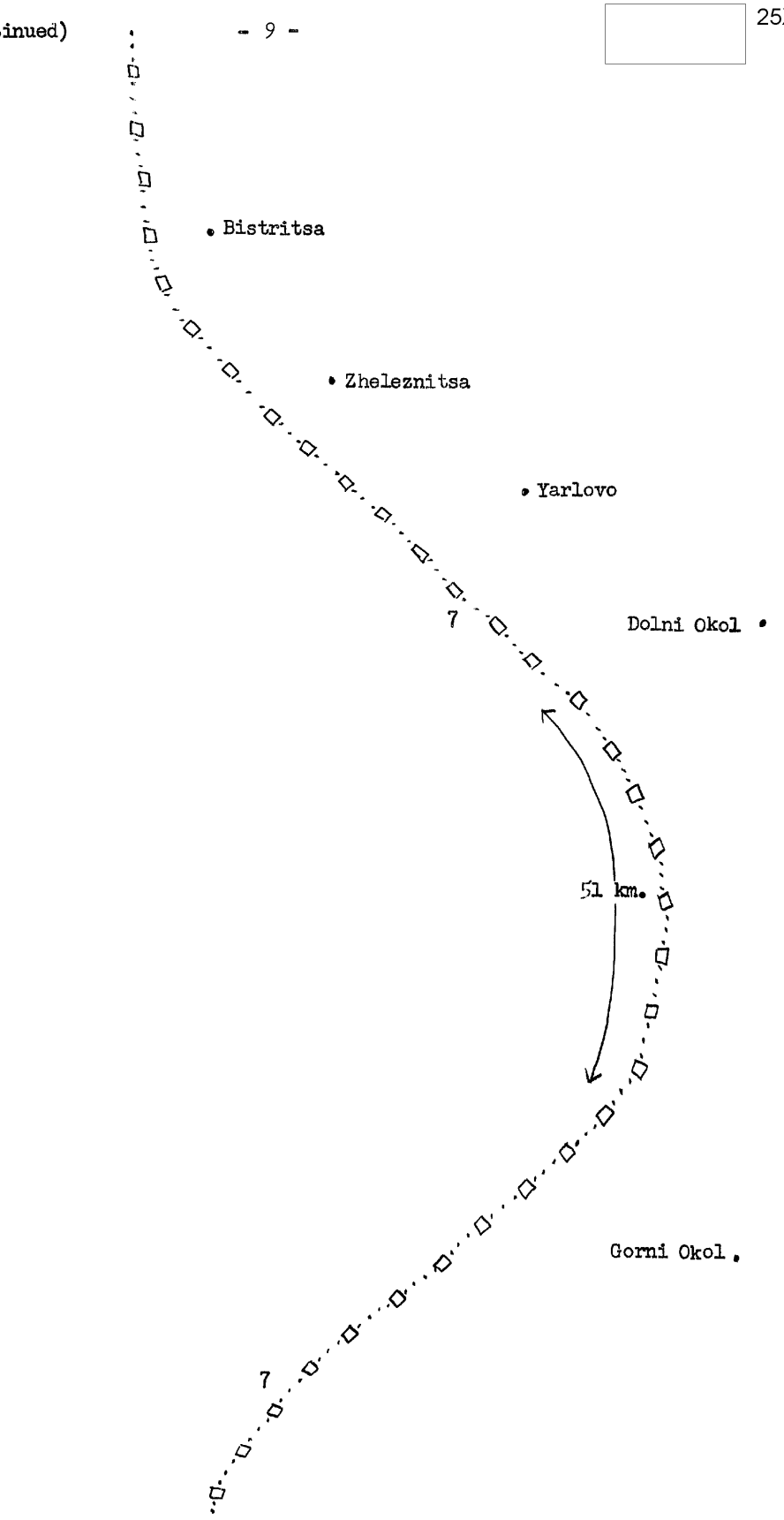

APPENDIX (Continued)

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